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III.—BRUGMANN'S LAW AND THE SANSKRIT VRDDHI.

It is a curious irony of fate that 'Brugmann's Law' refers not to one of this eminent master's numerous discoveries which have been welcomed without dispute and have become the common property of science, but to a dogma which was vigorously attacked at the outset, and which at times has had but few adherents, even having been officially pronounced dead by its opponents. The famous equation of European *o* with Sanskrit *ā* in open syllables, when first advanced by Brugmann in 1876 (*Zur Geschichte der stammabstufenden Declinationen*, Curt. Stud. IX 363 ff.), was intended as an important piece of evidence in support of the primitiveness of the European vowel variation *a, e, o*, and this fact gave a special animus to the earlier discussions. But the primitiveness of *a, e, o* is no longer a matter of dispute, and Brugmann may well be content with that share of the credit in bringing this about which is universally accorded to his article on the nasalis sonans, removing, as it did, the worst stumbling blocks in the way of such a recognition. The question, then, should be and is, at present, discussed entirely on its own merits.

For a time the earlier discussion participated in by Collitz (*Bz. B.* 2, 291 ff.; cf. also 10, 1 ff.) and J. Schmidt (*K. Z.* 25, 1 ff.) in opposition, and by Osthoff (*M. U.* I 208, note), de Saussure (*Système primitif des voyelles*) and Hübschmann (*Der indogerm. Vocalsystem*) in support of the doctrine, gave place to a simple registration of opinion, the doctrine being rejected by various scholars, including Gustav Meyer, *Griech. Gram.*², p. 7, note; Wackernagel, *Das Dehnungsgesetz der griech. Composita*, 116; Bartholomae, *Bz. B.* 17, 95. Within the last few years the discussion has been renewed, being opened by Bechtel, *Hauptprobleme*, 46 ff., with results adverse to the law, while soon after an energetic convert to the same appeared in the person of Streitberg (*I. F.* III 364 ff.). Fay, *Am. Journ. Phil.* XIII 478 f., offers a general explanation of the Sanskrit *vrddhi* as an extension from the *a*-series. Zubatý, *Bz. B.* 18, 254, promises a defense of Brugmann's equation, but it has not yet appeared.

Bartholomae, *Grundriss d. iran. Phil.* I 27, renews his opposition and Hübschmann, *Idg. Anz.* 6, 35, his allegiance. Finally Wackernagel, who had formerly expressed the opinion that the doctrine was done away with, has adopted it in part in his *Altindische Grammatik*. And still more recently Meillet, *Mém. Soc. Ling.* IX 142 ff., has argued in opposition to the law.¹

Brugmann's own attitude, as expressed in his *Grundriss* (cf. I, p. 70 f.; II, p. 1205, note), is that, while he does not maintain the equation as proven, the probabilities are in his opinion in favor of its acceptance, and that, in any event, it is still an open question, to be settled by a continued examination of the facts, not by declarations and counting of hands. And surely it is idle for any one to deny that the question is a living one, especially since the recent utterances of Streitberg and Wackernagel. It is, moreover, one of the most important questions of Indo-European phonology, one upon which an agreement would be most beneficial. For it is impossible to take up word-formation of any sort in Sanskrit without being brought face to face with this problem.

It is not my intention to follow the discussion in detail, as Bechtel has done. Many statements made on both sides would no longer be advanced and may be eliminated. The following propositions are, in my opinion, beyond dispute and may serve to bring out what is now the crucial point.

1. While there is nothing impossible in the supposition of a middle-time vowel which appears in one language under certain conditions as long, in another as short, yet the burden of proof rests distinctly on those who assume this. This seems to be acknowledged by Brugmann, *M. U.* III 119.

2. Of individual forms there are more which speak against the equation of *o* with Skt. *a* than for it. Not that we can establish a definite numerical ratio after the manner of J. Schmidt. The examples vary widely in respect to the weight which can be attached to them. In some the *o* is not in ablaut with *e* and so does not come within the range of Brugmann's hypothesis according to his later formulation. In some the probability in favor of the *o* vowel is no greater than for *e*. But there is a large number of instances of Skt. *a* in open syllables where the

¹ This article, a reprint of which I owe to the kindness of the author, reached me after my own article was practically completed. I have been able to add from it a few examples to the lists already collected, but in general our standpoints are wide apart, especially in regard to the causative formation.

evidence of other languages is plainly in favor of I. E. *o*. One may indeed explain these away, as Brugmann has done, by supposing analogical influence (as in *katara*, explained once as due to influence of *ka-*, more recently as due to a *katra-*) or by supposing that the Sanskrit represents the *e*-form of the root as against the *o* of other languages. But then we can also explain away *jānu* and *dāru*, and I believe that Brugmann will admit that the same reasoning which sees I. E. *o* in these forms would apply equally to those other and more numerous instances in which Sanskrit shows *a*.

3. There are certain form categories in Sanskrit which receive their simplest explanation through Brugmann's law. So, in the case of the causatives and perfects, Brugmann maintains that no explanation of these formations which is in any way satisfactory has yet been advanced by the opponents of his hypothesis (Grd. II, pp. 1146, 1205-6). And it is through the consideration of the ablaut of the *n-*, *r-* and *s-*stems that Streitberg has been converted. He says (I. F. III 365) that though this or that individual form may yet need explanation, this cannot weigh against the fact that a whole inflectional system is made intelligible through Brugmann's law. Wackernagel too, Altind. Gram., p. 13 f., assumes the equation for the categories in question, at the same time admitting that elsewhere I. E. *o*, even that which is in ablaut with *e*, appears in open syllables as *a*. This standpoint is the most convenient one and in a way embodies a truth, confirming the correctness of my propositions as to the relative probability in each case. Yet, as far as we are dealing with a question of phonetic process alone, it represents an untenable position. Eventually we must make a choice between the apparently conflicting lines of evidence. We must decide where to recognize the normal phonetic process and where the result of analogical re-formation. The categories in question represent, then, the crucial point of the discussion. If they cannot be explained except through Brugmann's law, this will overbalance the evidence from proposition 2. But if a reasonable explanation can be found, even though it may not be so simple and evident, the points in 1 and 2 will have their weight.

It is the object of this paper to show that these categories are intelligible without our having recourse to Brugmann's law. It is not claimed that any radically new principles have been discovered. Confusion of different ablaut series and extension

from lengthened forms within the *e*-series itself are the two forces to be operated with, and they have never been wholly absent from the discussion. But in contrast to the usual line of argument, the writer starts out with the conviction that in most of these categories Brugmann is right in assuming for the I. E. period *o* and only *o*. The few scattered forms of which so much has been made (e. g. Grk. γέγωνε, O.Norse bjō, Armen. *ekul*, Grk. μῆστορα, Lat. *sōpire*) are quite insufficient to prove the contrary. Where I do assume *ō* (or *ē*) for the Indo-European period (as in primary noun-derivation) it is on the basis of a large mass of material. And it is mainly on this point that I have thought to contribute something of importance to the discussion. I will consider these categories in the following order.¹

1. The first plural present indicative (*bhārāmas* = Grk. φέρομεν). The explanation of the *ā* offers so little difficulty that probably Brugmann would lay no more stress upon this point at present than does Wackernagel, *Altind. Gram.*, p. 14. In *bhārāmi* the *ā* represents I. E. *ō* (φέρω, etc.), and if, in addition to this, the first dual *bhārāvas* stands for I. E. *-ōmes* (Goth. *bairōs*, Bezzenberger, *Bz. B.* 5, 319; J. Schmidt, *K. Z.* 26, 11; Streitberg, *Beiträge z. idg. Sprachgeschichte*, 108), the appearance of *ā* in the plural is not only natural, but almost inevitable.

2. The inflection of consonant stems (Brugmann, *pādā* = πόδα, *uṣāsam* = ῥόα, *dātāram* = δώτορα, *ācmānam* = ἄκμονα). As already remarked, it is upon this point that Streitberg bases his support of Brugmann's law. And yet this is by no means a necessary consequence of his general theory. One may well believe with him and with Brugmann (against J. Schmidt and Collitz) that the long vowel belongs properly only to the nominative singular. But the types represented by Grk. ἄγων, ἄγωνος, ἄγωνα, Lat. *sermō*, *-ōnis*, *-ōnem*, Grk. πειθῆν, -ῆνος, Lat. *lien*, *liēnis*, Grk. μῆστορ, -τορα, Lat. *dator*, *datōris*, Grk. δοτήρ, δοτήρος, Goth. *tuggō*, *tuggōns*, O.B. *grāždane*, show an actual advance of the long vowel into the other cases, which Brugmann, *Grd.* II, p. 324, admits may have taken place in the Indo-European period,—in part at least, adding "Doch kann diese Stammform, wie umbr. *tribṛis-in-e*, *na-tin-e*, air. *er-mi-tin* zeigen, damals nicht durch alle Casus durchgedrungen gewesen sein." Exactly so. In Greek and Latin the

¹ Though the question is strictly one of Aryan phonology, the Iranian forms agree so nearly with the Sanskrit that it will not be necessary to refer to them except in special cases.

long vowel appears in all the oblique cases, if at all outside of the nominative, but the earliest extension, at the time (whether proethnic or ur-Greek and ur-Italic) when the weak ablaut forms had not yielded to the strong, would naturally be to the other strong cases only.¹ And may this not be precisely the state of things represented by Skt. *dātā, dātāram*? It is certainly arbitrary to deny for the Sanskrit the possibility of what one admits in the case of Greek and Latin—namely, the extension of the long vowel from the nominative. Cf. also Bechtel, Hauptprobleme, 59. Nor *can* any one deny this possibility, and if Streitberg, nevertheless, prefers the explanation afforded by Brugmann's law, it must be on account of certain coincidences which indicate to him that the Sanskrit variation of long and short vowels in the strong cases corresponds to an European variation of *e*- and *o*-vowels. And now Wackernagel, Altind. Gram., p. 13, while laying stress on certain individual correspondences of *ā* with European *o*, expressly states that in the other instances, such as *dātāram, rājānam, vācam*, the *ā* may be connected with the *ā* of the nominative, as in Grk. δοῖηρα, Lat. *datōrem, sermōnem*. It can only be to the advantage of the adherents of the law to eliminate in this way what is clearly only a fictitious support, and to recognize that the only genuine argument is to be derived from those forms in which a parallelism is to be observed between the Sanskrit quantitative and the European qualitative variation. And there is no denying that such parallels as *πατέρα : *ἔορα = pitāram : vasāram* and *εὐμενία : ἡόα = sumānasam : uṣāsam* are of striking effectiveness. None of the previous attacks have attempted to meet this point, with the exception of that of Meillet, Mém. Soc. Ling. IX 147, and even this is only partially satisfactory. He explains why, in the case of the *-on-*, *-or-* stems, an analogical extension of the *ō* (*ā*^o) should affect the accusative in *-a^on-am* and not the locative in *-a^oni*; but the inverse argument in relation to the *-en-*, *-er-* stems appears to me to lack cogency, except on the improbable supposition that their nominative had the *o*-vowel.

¹ In Greek and Latin, with few exceptions, a complete levelling of the stem-form has taken place in the oblique cases. If we find *κυνός* and *ἀρνός* we find also *κύνα, ἀρνα*; if *-ova* or *-ωνα*, so also *-ονος, -ωνος*. This, of course, is secondary. It is probable that the extension of the long vowel is earlier than this, quite possibly belonging to the Indo-European period. A series nom. *-ō(n)*, acc. *-on-*, gen. *-n-* first became *-ōn, -ōn-, n*, and only later *-ōn, -ōn-, -ōn*.

All in all, admitting that the parallels in question are not mere coincidences,¹ they appear to me to furnish a point in favor of Brugmann's law, to be weighed as such in the general conclusion. But they do not force us to its acceptance. Inverting the argument, I would ask: Is it any objection to the theory that the *ā* is everywhere due to levelling from the nominative, that it does not explain why we find this *ā* in certain stems, in others not? By no means. Can any one tell why in Greek, where this explanation of the long vowel is the recognized one, we find *δοτήρ*, *-ῆρα*, but *πατήρ*, *-ερα*? Why *πευθήν*, *-ῆνα*, but *αὐχίν*, *-ένα*; why *ἀγών*, *-ῶνα*, but *ἡγεμών*: *όνα*? Or give a ratio for the interesting coincidence that among the agent nouns, with a few exceptions, those in *-τήρ* show levelling, those in *-τωρ* not?

3. The third singular perfect (*jajāna* = *γέγνε*). As for Bechtel's explanation (Hauptprobleme, p. 57), I agree with Streitberg that little weight can be attached to Grk. *γέγωνε* and Germ. **bebōwe*, even if this last form is justified by Old Norse *bjö*.² Even with the support of Armen. *ekul* (Bartholomae, Grd. d. iran. Phil. I, p. 27; but cf. Hübschmann, I. F. Anz. VI 35) and O.Ir. *tāich* to *techim* 'flee,' *rāich* to *rethim* 'run' (Strachan, Bz. B. 18, 276; Brugmann, Grd. II 1249; I. F. VI 91), they are entirely insufficient to establish an I. E. type **pepōte* beside **pepote*. On

¹ Of this I am not *fully* convinced. The material is after all rather limited, so that the possibility of accidental agreement is not wholly eliminated, though I do not claim that it is probable. Streitberg's assertion that the agent nouns had originally only the *-tor*-suffix, as in Latin, is improbable in view of Grk. *δο-τήρ*, etc., O.Bulg. *-tel-*, and is not maintained by either Brugmann or Wackernagel. As far as the *r*-stems are concerned, the facts are simply these. The nouns of relationship show a short vowel. The only exception to this, aside from the secondary *ndptar-*, is *svdsar*. This is an *or*-stem, while the others, except *bhrātar-*, are *-er-*, *-ter*-stems. Further, the possessive compound *tvdt-pitāras* like Grk. *ἀ-πάτορες*, etc., Wackernagel, l. c., p. 13. Among the masculine and feminine *s*-stems, *uśas-* often shows *ā* (*uśāsam*, etc.) and is an *os*-stem (*ἥώς*, *aurōra*). In other stems we find *a* (except the solitary *toçāsā*), and these are mostly adjectives, which we know were *es*-stems (*εἰμέννης*, etc.). In the case of *n*-stems there is little foundation for any conclusion. Of the few forms which show *-anam*, etc., one, *vīṣan-* (*ἄπηνν*), is an *en*-stem, but we do not know that the others were *en*-stems or that those with *-ānam* were all *on*-stems. Streitberg's reasoning from the Germanic accusatives is not quite clear to me. As we have there a levelling in favor of the *-on*-form, but in Balto-Slavic in favor of the *-en*-form, any conclusion as to the original in any individual case is impossible.

² Against this cf. Wood, 'Reduplicating Verbs in Germanic,' Germanic Studies of the University of Chicago, II, p. 33.

the other hand, J. Schmidt's theory, Brugmann's rejection of which is approved by Bechtel as well as by Streitberg, seems to me to offer a perfectly tenable solution in its assumption of a confusion of different ablaut systems. J. Schmidt called attention to the perfect types Goth. *fōr* to *faran*, Lat. *fōdi* to *fodiō*, *scābi* to *scabō*, Grk. *ᾠδα* to *ᾠω*, *πέφνηα* to *φαίνω*. To these should now be added the type represented by Goth. *sētum*, Lat. *sēdī*, *vēnī*, etc. In fact, one has only to realize that outside of the *e*-series all verbs form their perfects with long vowel, and that even in the *e*-series there is a long-vowel type; further, that in Aryan all the qualitative differences between the various types have been obliterated, to see how readily a type **pepot-*, Skt. **papat-* might give way to *papāt-*. The roots of the heavy series which show a long vowel in the present as well as in the perfect (*ῥήγνυμι* : *ἔρρωγε*, Goth. *rēdan* : *rai-rōp*, Skt. *rādhnōti* : *rarādha*) may be left out of account as less likely to influence the forms of the *e*-series. But between the latter and those of the *a*- and *o*-series a point of contact was established in the present, this becoming, as it did in Aryan, identical for all three series. It is true that the perfects of the *a*- and *o*-series are without reduplication in Latin and Germanic, and were so probably in the parent speech. But we know that in Sanskrit as well as in Greek the reduplication reappeared under the influence of the other types; as, for example, in Skt. *babhāja*, Grk. *λεληθα*. We have, then, in a case like *babhāja* to *bhājāmi* the representative of a well-attested I. E. type. As we know from the European languages, it was a very respectable number of verbs which belonged to the *a*- and *o*-series and formed the perfect with lengthened vowel. But to justify the assumption that their perfect formation gained the predominance in Sanskrit, it is necessary to take the further fact into account that even among the verbs of the *e*-series an analogous formation existed. It is perfectly possible, for example, that Skt. *sasāda* corresponds to Lat. *sēdī* in the same way as *babhāja* to Lat. *scābi*, etc.¹ The proportional analogy leading to *papāta* in place of **papata* would be: as *bhājāmi* : *babhāja* and as *sādāmi* :

¹In spite of the conditions in Germanic, I am not convinced that the perfect type represented by *sēdī*, Goth. *sētum*, etc., was confined to the plural (and dual) at the close of the Indo-European period. I regard it rather as a parallel formation to *scābi*, *fōdi*, etc., whatever may be the ultimate origin of the long vowels. The existence of the *ē*-perfect type as a normal preterit formation in Albanian has been pointed out recently by Gustav Meyer, I. F. V 180 f.

śasāda, so *pātāmi*: *papāta*. Such ablaut-shifting among verbs is well known in all the Indo-European languages,¹ and nowhere are the conditions so favorable to such transfers as in Sanskrit. The fact that we have *papāta* but not **dadār̥ṣa* is natural enough, since it is just the roots ending in a single consonant which show the long-vowel perfect in the European languages.

As yet nothing has been said of the circumstance that the first singular in the earlier language shows the short vowel. It is on this point that J. Schmidt's theory, in the opinion of many, was wrecked. For Brugmann's criticism, repeated by Streitberg, was directed solely against Schmidt's explanation of the difference between the first and third singular. But it must be remembered that this difference has made trouble for Brugmann's theory also. de Saussure's hypothesis, which has Brugmann's partial and Streitberg's full approval, is a cleverly designed escape from the difficulty, but it is not claimed by its adherents that there is the slightest particle of corroborative evidence for it. There is as little trace of a qualitative as of a quantitative difference between the two persons in the European languages. Furthermore, an hypothesis may be formulated precisely parallel to de Saussure's, and equally incapable of proof or disproof, which would explain the difference in the persons in accordance with the view that the *ā* of *papāta* comes from perfects with *ā*, *ō* or *ē*. de Saussure supposes that the first person of the perfects in the *e*-series had the vowel of the present instead of the *o* of other persons; e. g. **pepetā*, 3d **pepote*, to *petō*. In the same way one may claim that in the *a*- and *o*-series the first person had the vowel of the present instead of the long vowel which appears elsewhere; as if in Gothic we had *faran*, perf. 1st pers. *far*, 3d pers. *fōr*. Since this is just as much or as little acceptable as de Saussure's view, no special advantage can be claimed for Brugmann's law on the score of its offering an explanation of the difference in persons.

But the explanation of this difference offered by J. Schmidt himself is after all, I believe, not so incredible as it has been represented. He supposes that, on account of the fusion of the different ablaut systems, the forms with long and with short vowels were for a while used promiscuously, and then differen-

¹ Cf. above, p. 287. The Irish perfects already mentioned, *rāith* and *tāich*, are perhaps best explained as owing their form to perfects from verbs of the *a*-series. This is more likely than Strachan's assumption of I. E. *ō*.

tiated to distinguish the first and third persons. Brugmann objects that the identity of the two persons in *dadarça*, etc., shows that no need was felt of distinguishing them. And it is true that J. Schmidt's expression, "um einem inzwischen fühlbar gewordenen Bedürfnisse abzuhelpfen," is open to objection. It was certainly not a matter of necessity. Now, it is a well-known phenomenon in language that forms which have come to be used promiscuously as mere doublets, gradually become differentiated again upon new lines, but it would be the opposite of the truth to suppose that in such cases there was any need of differentiation. Cf. Paul's chapter on the differentiation of meaning (Principien, p. 208 ff.; Strong, Logeman and Wheeler, p. 226 ff.). The Slavic languages furnish some especially instructive examples, for an acquaintance with which I am in part indebted to the lectures of Prof. Leskien. The identity of form between the *o*- and the *u*-stems in the nominative singular (O.B. *rabŭ* : *synŭ*) has produced even in Old Bulgarian many instances of metaplasm, and this has gone on until in the various modern Slavic languages a complete fusion of the two stems exists. In some cases only one of the two forms has survived, in others both that belonging to the *o*-stem and the one belonging to the *u*-stem. These were at first used promiscuously, but in many instances a strong tendency has developed to differentiate them in usage, although no such differentiation existed in other declensions in which doublets were not at hand. So in Russian beside the regular genitive in *a* (O.B. *raĭa*) is found the genitive in *u* belonging originally to the *u*-stems (O.B. *synu*). In the earlier centuries the two were used promiscuously, and are still so used in the dialects, but in the literary language there is a marked tendency to restrict the forms in *u* to the partitive usage, as *sněgu mnogo* 'much snow,' etc. Cf. Vetter, Zur Geschichte d. nominalen Declination im russischen, p. 16. Likewise in Czechish both forms exist. In the earliest period *a* was almost exclusively used, *u* being very rare. The number of *u*-forms gradually increased and they came to be used for inanimate objects. In the case of palatal stems (as *muž* = O.B. *mąžŭ*) no such distinction was made, as here there were no doublets. In some of the Moravian dialects the gen. in *a* is used for both animate and inanimate objects, while that in *u* shows the partitive usage as in Russian. Such instances, which might be multiplied, seem to me to show a phenomenon which is essentially, though not absolutely, parallel to that which J. Schmidt

supposes to have taken place in the Sanskrit perfect. Although *dadarça* served for both the first and third persons (cf. the Czechish palatal stems for both animate and inanimate objects), a differentiation of the doublets *pāpāta*, *pāpata*, (cf. Czech *-a*, *-u*) was effected, which is seen in the dialect of the Veda.¹ Later this differentiation was largely obliterated by the predominance of the form *pāpāta*, even in the first person.

Causatives (*bhārayāmi* = φορέω, Brugmann).

This category did not figure in Brugmann's earliest discussion, but at present is one of the leading arguments in favor of his view. Cf. Grundriss, II, p. 1146, note: "Eine irgend befriedigende Deutung des *ā* von *bhārayati* ist von denen, die diese Hypothese ablehnen, bis jetzt nicht gegeben. Die jetzt von Bechtel, Die Hauptprobleme der idg. Lautl., 169 f., vorgeführten angeblichen Parallelen aus den europ. Sprachen beweisen alle nichts." And it is also the writer's opinion that the attempts to establish the existence of an Indo-European type **pōtēiō* beside **potēiō* have not been convincing—not even the most recent and elaborate, that of Meillet, Mém. Soc. Ling. IX 143 f. Starting from the observation of Delbrück's, I. F. IV 132 f., to the effect that in Indo-Iranian the iterative meaning is associated with the forms with short *a* like *patáyāmi*, but the causative with those in long *a* like *pātáyāmi*,² Meillet maintains that we have to do with

¹ There is nothing to show that any such differentiation existed in Iranian. I know of no example in the Avesta of a first singular perfect of the type in question. Justi took *vavaca*, Y. 19. 9, as such, but this is clearly wrong. In the third person we find both short and long vowels, as *gayata*, *vavaca*, *tūlava* : *diḍāra*, *nānāsa*, the only occurrence in the Gathas happening to belong to the latter type.

² Delbrück's statement of this interesting observation conveys an exaggerated impression of the degree of strictness with which it holds. After quoting his earlier remark in the Altindisches Verbum, he continues: "noch bestimmter drückt sich Whitney aus, der gewiss jede Stelle geprüft hat. Er sagt: 'No forms without strengthening have a causative value made in the older language.'" But this statement of Whitney's occurs in a paragraph (§1042, *ö*) which treats only of roots with medial *i*, *u*, *r* and *l*. In §1042, *f* and *g*, which deal with the roots with medial or initial *a*, no such statement is made. Delbrück's lists of the causatives of the Rigveda, Altind. Verb. 211 f., contain some half-dozen forms with short vowel and causative meaning, and I cannot believe that he has changed his opinion of them. Cf. the following examples of the use of *naddya*, causative of *nad* 'sound,' and *gamāya*, causative of *gam* 'go': RV. i. 166, 5 *yāt tveṣḍyāmā nadāyanta pārvatān* 'when they (the Maruts) in their wild course made the mountains resound'; RV. vii. 7, 2 *ā sānu*

two distinct Indo-European formations which are to be recognized also in the European languages as distinct in both form and meaning. Leaving for the moment the forms with a long vowel, the idea that in the European languages the type **potéjō* is exclusively iterative in meaning appears to me simply untenable. Among the Slavic forms we have

1) Iteratives: *voditi* 'lead': *vesti*, *vedā* 'lead.' *voziti* 'ride': *vesti*, *vežā* 'ride.' *nositi* 'carry': *nesti* 'carry.' *goniti* 'drive': *gnati*, *ženā* 'drive.' *voliti* 'wish': *velēti* 'order.' *choditi* 'go': *šid* in *šidū* 'gone.' *prositi* 'ask': Lat. *precor*, etc. *sočiti* 'point out': Lat. *in-sece*, etc. *tvoriti* 'make': Lith. *tveriti* 'seize'?

2) Causatives: *ložiti* 'place': *lešti* 'lie.' *moriti* 'kill': *mrėti* 'die.' *pojiti* 'furnish drink': *piti* 'drink.' *topiti* 'sink' (trans.): *tonqti* 'sink' (intrans.). *tociti* 'pour': Lith. *tekū* 'flow.'¹

Meillet thinks that these latter forms are denominatives, and cites the accent of their presents in Russian and Servian as supporting this, e. g. Russ. 3d sing. *vódit* 'leads,' but *morít* 'kills.' But it is the accent of the causatives like *morít* which is what we should expect from the type **potéjō*, and the recessive accent of *vódit*, etc., which shows a departure from the original. Cf. Hirt, Indog. Akzent, 201 f. Moreover, the type **dorkéjō*, Skt. *darṣāyami* (i. e. from roots ending in *ṛ*, *ṛ*, *liq.* or *nas.* + *cons.*), cannot be separated from the preceding, and here too we have both meanings. So

1) Iteratives: *vratiti* 'turn' (*vrat* = *vort*-, Russ. *vorotit*): *vrūtēti* 'turn.' *vlačiti* 'draw' (Russ. *volocit*): *vlēšti* 'draw.'

ṣuṣmāir naddāyan pṛthivyā 'making the surface of the earth resound with his snortings'; RV. ix. 97. 13 *naddāyan eti pṛthivīm utā dyām* 'goes making earth and heaven resound'; RV. x. 152, 4 *yó asmāñ abhidāsaty ādharam gamayā tdmāḥ* 'whoever injures us him send thou into uttermost darkness'; RV. x. 145, 4 *pṛāram evā parāvātām sapdntniḥ gamayāmasi* 'to the very farthest distance will we drive the rival wife.' Even *patāya-* has a causative sense in one passage; likewise the corresponding Avestan form. Cf. Bartholomae, Stud. z. idg. Sprachgeschichte, II 182. Beside Skt. *chaddāya-*, Av. *sādāya-*, O.P. *padāya-* with non-causative meaning, we have also Skt. *dhārāya-*, Av. and O.P. *dārāya-*, also with non-causative meaning. There is, then, no hard and fast line of demarcation; but it remains true that the majority of forms with the short vowel have non-causative meaning, while the forms with long vowel show the causative meaning with few exceptions.

¹ There are several other verbs which appear to be of the formation in question rather than denominatives, as *kloniti* 'bend,' *moliti* 'beg,' *lomiti* 'break,' etc., but their etymology being unknown, they cannot be classified as regards function.

blāḍiti 'go astray' : *blēsti* 'go astray.' *maṭiti* 'disturb' : *mēsti* 'disturb.' *qziti* 'bind' : *vēzati* 'bind.' *trāsiti* 'shake' : *trēsti* 'shake.'

2) Causatives: *buditi* 'waken' (trans.) : *būdēti* 'waken' (intrans.). *uciti* 'teach' : *vyknāti* 'learn.' *pograḡziti* 'sink' (trans.) : *grēznāti* 'sink' (intrans.). *iṣāciti* 'dry up' (trans.) : *iṣēknāti* 'dry up' (intrans.).

As *vratiti* is identical in form with Skt. *vartāyāmi* (aside, of course, from the difference in the forms of the verb which are taken as captions), so *buditi* with Skt. *bodhāyāmi*. In Lithuanian the verbs in *-au*, *-yti*, which represent a fusion of our formation with the *ā*-denominatives, show a decided predominance of iterative over causative meaning, and in the corresponding Lettic verbs 134 are iteratives as against 7 causatives. Cf. Leskien, *Ablaut der Wurzelsilben im Litauischen*, p. 442. In Germanic, on the other hand, the causative meaning (as Engl. *set* : *sit*, *drench* : *drink*, etc.) is by far the more common. Cf. Brugmann, *Grd.* II, p. 1162. In Greek and Latin it is impossible to say just how many of the verbs in *-έω*, *-εō* belong here, but taking the examples given in Brugmann's *Grundriss* as the most certain, we find in Greek four with as against twelve without causative meaning; in Latin 7 show the causative meaning (*moneō*, *torreō*, *noceō*, *foveō*, *iubeō*, *doceō*, *suādeō*), 9 with non-causative meaning (*mordeō*, *tongeō*, *tondeō*, *spondeō*, *voveō*, *sorbeō*, *queō*, *augeō*, *haereō*) and 1 with both (*lūceō* with causative meaning sometimes in Plautus).¹ The few Celtic forms also show both meanings.

All in all the non-causative meaning appears to predominate slightly, but the causative meaning is so common that we are not justified in claiming with Meillet that it does not belong properly to the formation in question. We must rather follow Brugmann and Delbrück in attributing to the so-called causative formation both a causative meaning and one which we may simply designate as non-causative (originally perhaps iterative and intensive, but, as we usually find it, not differing from the meaning of the simple verb).

To return at length to the forms with a long vowel in the root-syllable, I do not believe that the scattered European forms which have been cited (Grk. *πωλέομαι*, Lat. *sōpīō*, and the Slavic forms

¹ Holding strictly to the type **potēiō*, which alone is discussed by Meillet, the ratio would be three causatives (*noceō*, *doceō*, *foveō*) to one non-causative (*voveō*).

quoted by Meillet, of which *plaviti* is the most striking) justify us in setting up another Indo-European formation with the verbal suffix *eḷ*, and differing from the preceding only in the quantity of the vowel.¹ The European forms may be compared with the Skt. *pātáyāmi*, etc., but only, I take it, as the result of the same process working for the most part independently in the different languages.

I refer to the influence of the denominatives. For in this is to be found the true explanation of the Sanskrit long-vowel causatives. That there has been a certain amount of confusion between the two classes in Sanskrit is evident and is generally admitted. Cf. Whitney, *Gram.*², §1056, and Brugmann, *Grd.* II, p. 1149. *Mantrāyate* (cf. *man-tra-*) and others bear their denominative origin on their face. Brugmann also operates with the same factor, but from the standpoint of his law it is the short-vowel formation *pātáyāmi* which requires this explanation. Allowing that one theory is in itself as likely as the other would be an admission that Brugmann's law is not necessary to the explanation of the causative formation. But my view is, if anything, in better accord with Delbrück's observation on the meaning. Originally the iterative meaning was somewhat the more common, but in Indo-Iranian the trend was toward the causative meaning. Similarly, the original formation had the short vowel, but in Indo-Iranian the trend was toward the long vowel, due, as I maintain, to the influence of the denominatives. It is natural that the two tendencies should go hand in hand.

This theory may seem at first sight to be only a shifting of the difficulty, since, according to Brugmann, the *ā* of *bhāra-*, etc., is also I. E. *o*. But it is just in these noun-forms that the evidence for an I. E. long vowel is overwhelming, as we shall see in the following discussion of the vṛddhi in primary derivation.²

¹ Bartholomae's idea, I. F. III 12, that even forms like Skt. *darçdyāmi* once had the long vowel will hardly meet with approval.

² This influence from the side of the denominatives dates, in the main, from the Indo-Iranian period. But as the noun-forms with a long vowel existed in the parent-speech, so also the denominatives, and it is of course possible that in a few instances the causative was affected even at that period. But I see nothing to force us to this conclusion. Meillet says that O.B. *plaviti* 'cause to float' cannot be a denominative from *plavi* 'ship,' which is of course true. But it may have arisen at a time when *plavi*, or the form from which *plavi* is descended, was not merely an agent-noun meaning 'that which floats,' but also an action-noun 'floating,' a denominative from which might readily have the factitive sense 'cause a floating.'

Primary Derivatives with Vowel-stems (*bhāra-s* = φόρο-*s*, *dāru* = δόρυ, Brugmann).

In Streitberg's now famous article on the 'Entstehung der Dehnstufe,' primary derivatives are treated only so far as they are consonant-stems, and we are led to infer that Streitberg does not admit the existence of an I. E. type **bhōro-s*.¹ He doubtless sees in the Sanskrit forms the operation of Brugmann's law, as elsewhere. But what of the European forms with the long vowel? He is of course aware of their existence and has cited a few from the Germanic in his *Urgermanische Grammatik*. But from his remark on Goth. *qēn-s* (I. F. III 330) as if it were a quite isolated form, and from remarks of other scholars, both adherents and opponents of Brugmann's law, it appears to me that the comparative frequency of such forms is not generally appreciated. I have therefore undertaken to give a more extensive collection than is to be found elsewhere. Mahlow indeed, *Die langen Vocale A E O*, p. 118, collected a considerable number of such forms, but rejected the most important evidence, owing to his untenable views of the representation of I. E. *ō* in Lithuanian and Germanic. Lith. *o* is exactly as good evidence for I. E. *ō* as would be Grk. *ω*. Cf. especially on this point Wiedemann, *Das litauische Präteritum*, p. 46 f. In general we may say that while the forms in question are comparatively rare in Greek and Latin, they are extremely common in Balto-Slavic and Germanic. In Lithuanian, I have glanced through the list of roots enumerated by Leskien, *Ablaut d. Wurzelsilben*, under series III (pp. 320-70), and find that of those roots which in their strong form end in a single consonant (cf. above), some 54 show noun-derivatives with a long vowel, while some 37 are without such. Of these latter

¹ The existence of such a type is by no means in conflict with Streitberg's general theory. It might well be a compromise form based on **bhōr* (φώρ) and **bhōro-s* (φόρο-ς). On the coexistence of these two forms cf. above, p.

Moreover, the conditions under which the long vowels appear are in accordance with those which Streitberg lays down. They appear, namely, only in the case of roots which in their strong form end in a single consonant, the vowel standing thus in an open syllable. For the Sanskrit cf. Whitney's statement (*Gram.*², §1143, a): "But the latter [vr̥ddhi] is only allowed under such circumstances as leave long *ā* as the resulting vowel. . . . Such strengthening as would make *vāida* and *māuda* does not accompany primary derivation." In the case of *s*-stems like Lat. *sēdēs*, Grk. *ῥήγος*, Skt. *vāsas*, we should assume first *sēdes-* and in ablaut with this *sēd-s*, then with restoration of the strong form of the suffix *sēdes-*.

many are roots which occur only in two or three words. Furthermore, many of the roots in series IV, all of which show long vowels, belong in reality to the *e*-series, as *stégiu* 'roof over,' *stóga-s* 'roof.' It is a fact that the great majority of productive roots in Lithuanian, as far as they are of the type in question, show long-vowel derivatives. So numerous are they that I have not attempted to cite them all. In the other languages I have cited all the certain examples which I have found, but do not pretend that the list is complete. My colleagues, Professors Blackburn and Schmidt-Wartenberg, have kindly furnished a number of the Germanic examples, but the majority of them I have collected from the various grammars and lexicons. In Greek I have omitted many words which, according to this or that proposed etymology, would be examples in point, but which seemed too uncertain to be worth citing.

1. Among *o*- and *ā*-stems:—

Balto-Slavic.

Lith. *dorà* 'agreement' to *deriù* 'bargain for.'

O.B. *u-darü* 'onset,' *dëra* 'cleft,' to *dera* 'flay' (Grk. *δέρω*, E. *tear*, Skt. *ḍr* 'pierce'). Cf. Skt. *dāra-s* 'cleft.'

O.B. *u-dava* 'suffocation' to *dunq* 'blow' (Skt. *dhū*, Grk. *θύω*, etc.).

Lith. *gëlà* 'violent pain' to *geliù* 'pain.' Cf. O.H.G. *quāla* 'pain' to *quelan* 'suffer pain.'

Lith. *āp-mota-s* 'heap,' *nei mōtais* used adverbially, to *metù* 'throw.'

Lith. *nū-mona* 'estimate,' O.B. *po-měnū* 'remembrance,' to Lith. *menù*, O.B. *mīnjā* 'think' (Skt. *man*, Grk. *μένος*, etc.).

Lith. *sq-noszaĩ*, used of things thrown up by the floods, Lett. *nāšcha* 'Achseljoch,' to *neszù* 'carry' (Skt. *naç*).

Lith. *skolà* 'debt' to *skeliù* 'be in debt' (Goth. *skulan*).

O.B. *slava* 'glory' to *slova*, *sluti* 'be famous' (Skt. *çru*, Grk. *κλύω*, etc.). Cf. Skt. *Çrāva-s*.

Lith. *svora-s* 'clock-weight' to *sveriù* 'weigh.' Cf. Goth. *swēr-s* 'important,' O.E. *swār* 'heavy,' etc.

Lith. *į-toka* 'inlet' to *tekù* 'flow' (Skt. *tak*, O.Ir. *techim* 'fly,' etc.).

O.B. *o-travū*, *o-trava* 'poison' to *o-trova* 'poison,' *trova* 'use up' (Grk. *τρύω*, etc.).

Lith. *trobà* 'building' to the root *treb*, O.Ir. *atreba* 'dwells,' Umbr. *trebeit* 'versatur.' Cf. O.E. *prōp* 'village.'

Lith. *į-voda* 'conduit' to *vedù* 'lead, marry' (cf. Skt. *vadhū-s* 'bride,' Av. *vādayeiti* 'leads'). Cf. also O.B. *vodo-važdo* 'conduit.'

Lett. *wāl-s* 'swath,' O.B. *valū* 'wave,' to Lith. *veliū* 'turn, roll' (Lat. *volvō*, Grk. *ἐλίω*, etc.).

Lith. *vorà* 'row, series,' probably to *veriū* 'open and shut' (Skt. *vr̥* 'inclose,' Goth. *warjan*, etc.). Cf. Skt. *vāra-s* 'one's turn,' *tri-vāram* 'three times' (Per Persson, K. Z. 33, 293).

Lith. *isz-vora* 'soup,' Lett. *wārs* 'soup,' O.B. *varū* 'heat,' to Lith. *vēr-du* 'boil,' O.B. *virja* 'boil.'

Lith. *pra-vožà* and *pra-vėžà* 'wagon-track' to *vežù* 'ride' (Skt. *vah*, Lat. *vehō*, etc.). Cf. Skt. *vāha-s* 'beast of burden,' Goth. *wēg-s* 'wave.'

O.B. *po-žarū* 'conflagration' (from **po-žērū*) to *gorja* 'burn' (Skt. *ghar-mā-s* 'heat,' Grk. *θερμός*, etc.).

Lith. *bėga-s* 'course,' O.B. *bėgū* 'flight,' to Lith. *bėgu* 'flee' (Grk. *φέβομαι*)

Lith. *pa-sėda-s* 'a sitting,' *at-sodà* 'settling,' O.B. *są-sėdū* 'neighbor,' to Lith. *sėdžu*, O.B. *sėždą* 'sit' (Skt. *sad*, Lat. *sedeō*, Goth. *sitan*, etc.). Cf. Skt. *sādā-s* 'sitting on horseback,' O.E. *sēt* and *sōt* 'soot,' below, p. 461.

O.B. *po-sėkū* 'a cut' to *sėką* 'cut' (Lat. *secō*). Cf. O.H.G. *suohha* 'harrow, furrow.'

Lith. *stīga-s* 'roof' to *stėgiu* 'roof over' (Skt. *sthaḡ*, Grk. *στέγω*, Lat. *tegō*, etc.).

In the last four examples the verbs also show the long vowel, but the cognate forms of other languages show that the roots were not originally of the heavy series.

O.B. *věra* 'faith,' Lat. *vēru-s*, O.Ir. *fīr* 'tree,' O.H.G. *wāra* 'truth,' belong here if the root is *uer*, as is indicated by the O.Pers. *varnavātiy* 'appears credible' or 'convinces.' On the meaning of the Old Persian word cf. especially Hübschmann, Z. D. M. G. 38, 424. Kluge's derivation from **ues-ro* is absolutely impossible.

Lith. *prōta-s* 'intelligence' to *su-prantū* 'understand,' Pruss. *iss-presstun*. Cf. Goth. *frōp-s* 'wise.' The Prussian forms show that the root is of the *e*-series. Fick, Noreen and others compare Lat. *inter-pretor*.

O.B. *samū* 'self,' O.E. *ge-sōm* 'unanimous,' beside *ómō-s*, *āma*, Lat. *simili-s*, Goth. *sama* 'same.' Cf. Av. *hāmō* beside Skt. *samā-s*.

Lith. *nūga-s* 'naked' beside Goth. *naqap-s*, Lat. *nūdu-s*, etc., perhaps belongs here, though only forms with *o* and *ō* exist.

Germanic.

O.E. *ĕt* 'food' to *etan* 'eat' (Lat. *edō*, etc.).

O.H.G. *bāra*, O.E. *bær* 'bier,' to *beran* 'bear' (Grk. *φέρω*, etc.).

O.E. *brōk* 'brook' (O.H.G. *bruoh* 'swamp'), probably to *brecan* 'break.' Cf. also O.E. *brēc* 'breech,' plur. *brēc* 'breeches,' O.H.G. *bruoh* 'breeches.' See Kluge, s. v. *Bruch*.

O.N. *drāp* 'murder' to *drepa* 'strike,' Germ. *treffen*.

O.H.G. *fuora*, O.E. *fōr* 'way, journey,' to Goth. *faran* (Skt. *pr*, Grk. *περάω*, etc.). Cf. Skt. *pārā-s* 'crossing.'

O.H.G. *fāra* 'danger,' O.N. *fār* 'danger,' O.E. *fēr* 'danger, fear,' to the same root as the preceding (cf. Grk. *πεῖρα*, Lat. *periculu-m*).

O.H.G. *frāga* 'question' to Goth. *fraihnan* 'ask' (Lat. *precor*, etc.).

Goth. *frōp-s*, O.N. *frōð-r* 'wise.' Cf. Lith. *isz-prōta-s* 'intelligence' above, p. 460.

O.N. *gāfa* 'good fortune,' M.H.G. *gābe*, Dutch *gaaf* 'gift,' to Goth. *giban* 'give.'

O.N. *kvāma* 'arrival' to Goth. *qiman* (Skt. *gam*, etc.).

O.H.G. *quāla* 'pain,' Dutch *kwaal* 'pain,' to O.H.G. *quelan*, O.E. *cvelan* 'suffer pain.' Cf. Lith. *gėlà* 'violent pain' to *geliù* 'pain,' above, p. 459.

O.H.G. *lāga* 'situation' to Goth. *ligan* (O.B. *lega*, Grk. *λέχ-os*, etc.). On O.H.G. *luoga* cf. Osthoff, I. F. V 313.

Goth. *uz-mēt* 'conduct,' O.N. *māte* 'manner,' O.H.G. *māza*, Dutch *maat* 'measure,' to Goth. *mitan* 'measure' (Grk. *μέδομα*, Lat. *modu-s*, etc.).

Goth. *anda-nēm* 'acceptance,' O.H.G. *nāma*, O.E. *nām* 'theft,' to Goth. *nīman* 'take' (Grk. *νέμω*, etc.).

O.H.G. *scāra*, Dutch *skaar*, O.N. *skære* (plur.), Mid.E. *schēre* (plur.) 'shears,' to O.H.G. *skeran*, etc. (Grk. *κείρω*, etc., Per Persson, Wurzelerweiterung, 29). Cf. also M.H.G. *schuor* 'shearing.'

O.H.G. *scāla* 'shell' and 'drinking-vessel,' O.N. *skāl* 'drinking-vessel, scales,' to Lith. *skeliù* 'split.' Cf. especially Per Persson, K. Z. 33, 285. Lett. *schkēle* 'chip' and perhaps Skt. *kāla-s* 'time' are from the same root.

M.H.G. *sāze* 'dwelling-place, situation,' O.E. *sæt* 'ambuscade,' to Goth. *sitan*.

O.E. *sōt*, O.N. *sōt* 'soot,' probably to the same root as the preceding, 'soot' being 'that which settles on anything' (so Fick, Noreen and others).

O.H.G. *suohha* 'harrow, furrow' to Lat. *secō*, etc.

O.H.G. *sprāhha*, O.E. *spræc* 'speech,' to O.H.G. *sprehhan*, O.E. *sprecan* 'speak.'

Goth. *swēr-s* 'important, honored,' O.H.G. *swār*, O.E. *swār* 'heavy,' to Lith. *sveriù* 'weigh.' Cf. Lith. *svora-s* 'clock-weight' above, p. 459.

O.E. *swōl* 'heat' to *swelan* 'burn' (Lith. *svilù* 'be singed').

Goth. *wēg-s*, O.N. *vāg-r*, O.H.G. *wāg*, O.E. *wæg* 'wave,' and O.H.G. *wāga*, O.E. *wæg* 'scales,' both to Goth. *wigan* (Lat. *vehō*, etc.).

O.N. *kongor-vāfa* 'spider' to *vefa* 'weave' (Grk. *ίφαίνω*, etc.). Cf. Skt. *ūrṇa-vābhi-s* 'spider.'

O.E. *wēt* 'wet' beside *wæter*, Goth. *watō* 'water,' Grk. *ῥδωρ*, etc. The root is usually given as *ued*, but it might also be of the *a*-series.

O.E. *wræc*, Dutch *wraak*, O.H.G. *rāhha* 'vengeance,' to *wrecan*, Goth. *wrikan* 'pursue.'

On O.H.G. *wāra* 'truth' and O.E. *3e-sōm* 'unanimous,' cf. above, p. 460.

Greek.

There are not many certain examples among noun-forms, but we are justified in citing denominatives in further proof of the existence of the type. Such denominatives are:

βρωμάομαι beside βρέμω.

δαμάω beside δέμω.

κλωπάομαι beside κλέπτω.

λωγάω beside λέγω (Hesychius; cf. Schulze, Quaest. Epic. 507).

νομάω beside νέμω.

πωλέω, πωλόομαι beside πέλομαι, πολέομαι.

πωτάομαι beside πέτομαι.

στρωφάω beside στρέφω.

τρωπάω beside τρέπω.

τρωχάω beside τρέχω.

πηδάω to root *ped*, Skt. *pad*.

φληδάω beside φλέδων.

Of actually existing noun-forms, *λώπη* to *λέπω* is an unquestionable example; likewise *λώγη* συναγωγή σίτου (Hesychius). *θώραξ* = Skt. *dhāraka-s* 'holding' implies a **dhōro-* from the root *dher*, Skt. *dhṛ* 'hold.'

In the following examples the etymologies are less certain, but probable:

βῶλο-s to βέλος, βάλλω, etc.

ἔρημο-s to ἡρέμα, Goth. *rimis* 'quiet,' Skt. *ram* 'be content,' etc.

πηδό-ν 'blade of the oar,' and so perhaps originally 'foot,' like πούς, Skt. *pād*, *pāda*-, Lith. *pėdà* 'footstep,' to root *ped*. Cf. πηδάω.

σκάλο-s, σκάλο-ν to σκάλλω, Lith. *skeliù* 'split.' Cf. Lett. *schkēle* 'chip, splinter.'

σωρό-s, σώρακο-s 'basket' or 'box' beside σορός, to Lith. *tverù* 'seize.'

ῥα (cf. βῶροι· ὀφθαλμοί in Hesychius) belongs to ὀράω, Goth. *war-s* 'careful,' but we cannot be sure of the ablaut series.

Here may also be mentioned the adverb τῆλε, τηλοῦ to Skt. *cīram* 'long,' *carama-s* 'last.' Some of the examples cited by Meillet, Mém. Soc. Ling. IX 146, such as κωφό-s, κῶμο-s, χῶρο-s rest on etymologies which appear to me more doubtful than the preceding.

Latin.

In Latin the examples are even fewer than in Greek. Evidence of the existence of the formation is furnished by *sēdō* beside *sedeō*, *cēlō* beside *oc-culō* (O.E. *helan*, O.Ir. *celim*, etc.), by *vēnor* according to Meillet's etymology (Skt. *van* 'win, pursue'), further by *fērali-s*, *rēgulu-s*, *tēgula*, and perhaps by *sēriu-s* (Goth. *swēr-s* 'important,' O.E. *swār* 'heavy,' etc.?). Cf. also *collēga*, *collēgium* to *col-legō*, further *vēlōx* to *volō*, *volāre*.

2. Among *i*-stems.

The vrddhi in Sanskrit is comparatively rare, but is seen in a number of agent-nouns and adjectives, as *sādi-s* 'rider,' *sāci-s* 'accompanying,' — *dhāri-s* — bearing,¹ — *jāni-s*¹ 'having a — wife.' Cf. Whitney, Gram.², §1155, *d*. Parallels are to be found in the European languages, chiefly in Germanic, where adjective *i*-stems with strengthened root-syllable are not uncommon. In forms like Goth. *un-qēp-s*, *anda-nēm-s* some scholars see an historical connection with the perfect stem *qēp*-, *nēm*-, but I do not see why they need be separated from forms like O.H.G. *chuoli*, *kuoni* with I.E. *ō*.

O.H.G. *-bāri* (Mod. Germ. *-bar*), O.E. *-bære* in compounds, as O.H.G. *scin-bāri* 'manifest,' M.H.G. *vrucht-baere* 'fruitful,' *lust-baere* 'joyful,' Mod. Germ. *frucht-bar*, *lust-bar*, etc. (Willmanns,

¹ On the justification of citing here such forms as occur only in compounds, cf. below, p. 469.

Deutsche Grammatik, II, p. 492 f.), O.E. *lust-b̄re* 'joyful,' *fȳr-b̄er* 'fire-bringing,' etc. Cf. Skt. *-dhāri-* in *cāmara-dhāri-s* 'plume-bearing.'

O.N. *glōp-r* 'misdeed' to *gleppja* 'injure.'

M.H.G. *hāle*, *haele* 'concealing' to *helan* 'conceal' (O.Ir. *celim*, Lat. *oc-culō*, etc.). Cf. Lat. *cēlō*, *cēlāre*.

Goth. *qēn-s*, O.N. *kvæn*, O.E. *cwēn* 'woman, wife.' Cf. Skt. *-jāni-* in compounds, as *priya-jāni-s* 'having a dear wife.'

Goth. *un-qēþ-s* 'unspeakable' to *qīþan* 'say.'

O.N. *kvām-r*, O.E. *cwēme*, O.H.G. *bi-quāmi* 'suitable,' to Goth. *qīman* 'come' (root *g^{em}*, Skt. *gam*, etc.). Cf. also O.N. *kōm-r* 'suitable.'

O.H.G. *chuoli*, O.E. *cōl* 'cool,' beside *kalt*, *ceald* 'cold,' both from a root *gel* seen in Lat. *gelu*, *gelidu-s*, etc.

O.H.G. *kuoni* 'bold,' O.E. *cēne* 'bold,' O.N. *kæn* 'wise,' to *kennen* (root *ġen*, *ġnō*, Skt. *jñā*, etc.).

O.N. *lōk-r* 'brook' to *leka* 'drip,' E. *leak*.

O.E. *māte* 'moderate,' O.H.G. *-māzi*, O.E. *-māte* in compounds, as *un-māzi*, *un-māte* 'immense,' etc. (Mod. Germ. *-mässig*), to Goth. *miþan* 'measure' (Grk. μέδομαι, Lat. *modu-s*, etc.).

Goth. *anda-nēms* 'acceptable' to *nīman* 'take' (Grk. νέμω, etc.).

O.N. *rōk-r* 'right' beside *rettr* 'right,' Goth. *raihts*, to the root of Lat. *regō*, *rēc-tu-s*, etc.

Goth. *anda-sēt-s* 'horrible' to *sītan* 'sit' (Lat. *sedeō*, etc.).

O.H.G. *spāhi* 'wise' to *spēhōn* 'investigate, spy out' (Lat. *speciō*, etc.).

O.H.G. *trāgi*, O.E. *trāg* 'slow, lazy,' to Goth. *trigō* 'sadness,' O.E. *trega* 'misery, grief,' etc.

O.H.G. *gi-zāmi*, O.E. *ȝe-tēme* 'suitable,' O.H.G. *widar-zāmi* 'hateful,' to Goth. *ga-tīman* 'be suitable.'

Goth. *wēn-s*, O.N. *wēni*, O.E. *wēn* 'hope' (O.H.G. *wān* 'uncertain idea,' Mod.G. *Wahn*), from the same root *uen*, as O.E. *winnan* 'strive,' Skt. *van* 'desire, win.'

O.H.G. *ge-vāzi* 'commeatus,' Mod.G. *Gefäss*, beside *Fass*, E. *vat*, both perhaps from the root *ped* seen in Grk. πῆδη, E. *fetter*, etc.

Lith. *žvērī-s*, O.B. *zvērī* 'wild beast,' to Grk. θήρ, Lat. *feru-s*.

O.B. *plavī* 'ship' to *plovā* 'swim, sail.' Cf. Skt. *plāva-s* 'overflow.'

O.B. *rēcī* 'speech' to *reka* 'speak.'

O.B. *tvarī* 'creation' to *tvorīti* 'make,' Lith. *tverīù* 'seize, hold.' Further may be mentioned Lith. *mėti-s* 'throw' to *metù* 'throw,'

Lett. *mēris* 'pest' to Lith. *mīrsztū* 'die' (Skt. *mṛ*, Lat. *morior*, etc.), Lett. *nēsi-s* to Lith. *neszū* 'carry,' though these are inflected as *īo/i*-stems.

O.B. *žalī* 'pain' (from **gēli*) to Lith. *gelū* 'pain.'

Grk. *δηρι-s* has often been connected with *δέρω*.

3. Among *u*-stems.

Here again the *vrddhi* in Sanskrit is comparatively infrequent, the clearest instances being the neuters *dāru* 'wood,' *jānu* 'knee,' *sānu* 'ridge, back,' and the adjective *dārū-s* 'bursting' (*dṛ*, Grk. *δέρω*, etc.). With *dārū-s* we may compare Lith. *romū-s* 'quiet, mild' to *rim-stū* 'be quiet,' Skt. *ram* 'be content,' etc. In Greek a *γώνυ* beside *γόνυ* is to be inferred with J. Schmidt from *γωνία*, for which no other explanation has been offered, as far as I know. Cf. also *τρίγωνον* and Armen. *cunr* 'knee.' From *στωμύ-λο-s* may be inferred a **στωμυ-* (cf. *δρτμύ-λος* to *δρτμύ-s*) beside the noun *στόμα*, both from a root *stem*, meaning perhaps 'to sound.' Bechtel and Prellwitz compare plausibly Skt. *stāmu-s* 'sounding,' though this has usually been connected with *stan* (*stā-mu-*; cf. Wackernagel, Altind. Gram., p. 14). Goth. *foṭu-s* is probably a specifically Germanic development, but may be mentioned as indicating how the type may have arisen elsewhere. The neuters like *dāru* and *jānu* may be based on the type represented by Greek *δῶ* (I. E. **dō(m)*; cf. J. Schmidt, Pluralbildung, 222 f.).

4. Among *s*-stems.

In Sanskrit the *vrddhi* appears rarely, as in *vāsas* 'garment' to *vas* 'clothe,' *vāhas* 'offering' to *vah* 'carry,' *-vācas* beside *vacas* 'speech.' We may compare:

Grk. *γῆρας* beside *γέρον*, Skt. *jarant-* 'old.'

ῥῆθος beside *ῥθος*, Skt. *svadhā* 'custom.'

ῥῆγος to *ρέζω*, Skt. *raj* 'color.'

μήδος to *μέδομαι*, *μήδομαι*.

Lat. *sēdēs* to *sedeō*. Cf. also the forms of other ablaut series, as *ambāgēs* to *agō*, *contāges* to *tangō*, *mōlēs* beside *moles-tu-s*.

O.N. *dōgr* 'day of twelve hours,' O.E. (Northumbrian) *dōzor* (Sievers, Ags. Gram., §289) beside *dæz*, Goth. *dag-s* 'day,' Skt. *daḥ*, Lith. *degū* 'burn.'

Goth. *þēvis* 'slave' beside *þiu-s* 'slave' (from **tēq²es-* : **tēq²o-*).

A few other instances are quoted by J. Schmidt, Pluralbildung, 147 f.; Bechtel, Hauptprobleme, 242 f.

5. Among other stems.

In stems other than those already mentioned, the lengthened vowel is of the rarest occurrence. Grk. ἥπαρ, Iranian *yākar*^o 'liver,' as compared with Skt. *yákṛt*, Lat. *iecur* is an interesting example, and another instance from the same declensional type is Grk. νῶκαρ 'sleep,' provided this belongs to *νέκυ-ς* (Prellwitz). In Skt. *rājan-* the long vowel doubtless had its origin in the monosyllabic *rāj-*, but one may compare O.N. *dōgn* 'day,' Goth. *uz-ēta* 'manger' to *itan* 'eat,' Lith. *vėmo* 'vomiting' to *vemiù* 'vomits,' Grk. δῶμα. Before *-iō-* as a primary suffix the vrddhi is not to be recognized. Skt. *rājya-s*, Lat. *rēgiu-s* are evidently secondary derivatives from *rāj-*, *rēg-*, and in the same way are to be judged other examples where the simplex no longer exists, e. g. Lat. *sēriu-s* from **sēro-*, **sūēro-*, if connected with Goth. *swēr-s*.

Before a suffix beginning with a consonant, vrddhi is quite exceptional in Sanskrit. With *vās-tu-* 'abode,' *bhār-man-* 'support,' one may perhaps compare the Slavic *nevěsta* 'bride' from **ne(vo)-věsta*¹ 'newly wedded,' *věsta* from *věd-tā* to *veda*. In accordance with Streitberg's theory, one would assume original forms **vesetu-*, **bharemen-*, **vedetā*. The Lithuanian infinitives like *kėlti* or *sverti* (Streitberg, I. F. III 408 f.) and Lat. *lēctu-s*, *rēctu-s*, *tēctu-s* may be mentioned in this connection, but the long vowel of the Lithuanian preterits and the Latin perfects is largely responsible. Skt. *sāḍhā-s*, participle of *saḥ* (Osthoff, Perfect, 30), is a doubtful parallel. Cf. Wackernagel, Altind. Gram., §34 b, §40.

We have seen that it is not alone in Sanskrit that primary derivatives with the long vowel in the *e*-series are found, and that in *o*-stems, where such are frequent in Sanskrit they are also frequent in Balto-Slavic and Germanic, and not unknown in Greek and Latin. In consequence of the belief that Skt. *bhāra-s* represents I.E. **bhoro-s*, Brugmann assumes that Skt. *bhāra-s* stands for I.E. **bhero-s*. But since the existence of the type **bhōro-s*, **bhēr-o-s* is established, I submit that the equations Skt. *bhāra-s* = I.E. **bhōro-s*, **bhēr-o-s* and Skt. **bhāra-s* = I.E. **bhoro-s*, **bhero-s*, have an equal historical backing.

We have now completed our discussion of those categories which have furnished the chief support to Brugmann's law, and

¹ It is not necessary, with Prusik, K. Z. 33, 160, to assume an exception to the change of *eu* to *ou*. The haplogy, to use Bloomfield's expression, might date back of the period when this change took place.

have endeavored to show that in no case is this law requisite to their explanation, and that only in one of them does it offer any distinct advantages. If this attempt is successful and if we then take into account the isolated forms where the evidence is distinctly against it, as Wackernagel's position (cf. above, p. 447) shows, it ought to be admitted that the scales fall on the other side, and that, all in all, Sanskrit phonology and morphology are simpler and more intelligible without the assumption in question than with it.

There remains one category which has no direct bearing on Brugmann's law, but which is an important part of the general question of *vrddhi* in Sanskrit—namely, the *vrddhi* of secondary derivation. Its consideration is also necessary in justification of my having cited above as primary derivatives some forms which others have regarded as secondary.

The Vrddhi in Secondary Derivation.

It appears to be the prevailing opinion that the phenomenon of *vrddhi* in secondary derivation is not confined to the Aryan branch, but existed in the Indo-European period. Kluge, Paul's *Grundriss*, I 395, J. Schmidt, *Urheimat der Indogermanen*, p. 26, and Kretschmer, *K. Z.* 31, 456, have adduced material to support this, and their conclusion, in contrast to that of v. Bradke, *Z. D. M. G.* 40, 362, is approved by Streitberg, *I. F.* III 380, and by Bloomfield, *Trans. Amer. Phil. Assoc.* 26, 8. Since it is admitted by all that the process is of widespread application only in Indo-Iranian, but at the same time must be the outgrowth of something which existed in proethpic times, the question may seem to be merely one of degree. Yet there is a definite question involved—namely, Had a direct connection between the lengthening of the vowel and the process of secondary derivation become established in the proethnic period? Are there examples from the European languages in which a long vowel is clearly attributable to the fact of secondary derivation, as is the case in Indo-Iranian? The answer, I believe, still admits of reasonable doubt. Certainly the evidence in favor of the affirmative has been overestimated.

In the first place, many of the forms adduced have no claim to be regarded as secondary derivatives. O.H.G. *bāra* 'bier' (to *beran*), O.H.G. *quāla* 'pain' (to *quelan*), O.H.G. *spāhi* 'wise' (to *spehan*), Goth. *swērs* 'honored, important,' O.H.G. *swār* 'heavy'

(to Lith. *sveriù* 'weigh') have nothing either in form or meaning to indicate that they are anything but primary derivatives, and, accordingly, they have been cited above among the numerous other examples of the same nature. Goth. *qēns* 'wife, woman' is cited by J. Schmidt and Streitberg as derived from *qinō* 'woman,' but the use of the two words in Germanic lends no support to the assertion that *qēns* is a collective. It is simply one of a set of derivatives showing various ablaut forms of the same root; cf. Brugmann, Grd. II 105, 262. Nor is it clear that M.H.G. *swāger* 'brother-in-law' is actually derived from *sweher* 'father-in-law'; cf. Brugmann, Grd. II 825, note. Granted the connection of Goth. *mēgs* 'son-in-law' with *magus* 'servant,' there is nothing in form or meaning to show that the former is derived from the latter, and not merely from the same root. O.N. *dōgr* 'day' (of twelve hours) has been contrasted with *dagr*, but may well be a primary derivative like Lat. *sēdes*, Grk. *ῥῆγος*, etc., and is so regarded by J. Schmidt, Pluralbildung, 149, 151. There is no reason for viewing Grk. *μέρμηρα*, cited by Bechtel, as a secondary compound. In fact, according to the system as developed in Sanskrit, it would have to be **μῆρμερα* (yielding **μερμερα*); cf. Skt. *gādgadya-m* 'stammering' to *gadgada-s* 'stammering' (adj.), *cāñcalya-* 'variability' to *cañcala-s* 'movable.' Kretschmer's explanation of the puzzling Homeric *ῥῆγος* is too uncertain to be used as evidence. And for Goth. *sibuntēhund*, etc., J. Schmidt's explanation seems less probable than that of Wheeler and Brugmann, simply from the Germanic standpoint.

In some of the other words which have been brought forward we have to do unquestionably with secondary derivatives, but there is no evidence that the long vowel did not already exist in the primary nouns or adjectives from which they are derived. Lat. *rēgula* and *tēgula* may come from **rēgo-*, **tēgo-* (cf. Lith. *stōga-s* 'roof') as well as from **rego-*, **tego-*. Grk. *στωμύλος* is not derived directly from *στόμα*, but presupposes a **στωμυ-ς* formed from the same root. Cf. above, p. 465.

Goth. *fidur-dōg-s* 'τετραταῖος' and *ahtau-dōgs* 'ἡκταήμερος' have been cited since Schleicher as secondary derivatives from *dag-s* 'day.' In particular they have been compared with Skt. *ṣatā-ṣārada-* 'containing a hundred years,' *dvi-jāni-* 'having two wives,' etc., as evidence of the existence of a vrddhi peculiar to the second members of compounds. The comparison was first suggested by de Saussure (Système primitif, 165, note), with a

distinct reservation on account of Norse *dōgr*, but others, as Bezzenger, Henry, J. Schmidt, Kretschmer and Bechtel, have not hesitated to accept it as significant of a special variety of vṛddhi. Wackernagel, however (Dehnungsgesetz, 23), expresses scepticism. And this scepticism is fully justified. One can, indeed, find still other examples of vṛddhi-forms occurring only in composition. Especially appropriate to the Goth. *fidur-dōg-s* beside *dag-s* is a Lithuanian form belonging to the same root—namely, *atō-dogeī* ‘summer rye’ beside *daga-s* ‘harvest.’ Further, O.B. *vodo-važda* ‘aqueduct’ beside *voždī* ‘leader.’ With the Sanskrit compounds in *-dhāri-s* may be compared the Germanic compounds in *-bāri-* (O.E. *-bære* only in compounds; O.H.G. *-bāri*, but also *bārig* ‘fruitful’). And there are others. But two facts tend to rob all such cases of any special significance. In the first place, a form which in one language occurs only in compounds may be found uncompounded in another language. The Sanskrit compounds in *-jāni-*, like *priya-jāni-* ‘having a dear wife,’ have been cited, but in Germanic beside the Old Norse *full-kvēni* ‘having a good wife’ stands the simple *kvēn*, Goth. *qēn-s*. In Old High German *-māzi* is confined to compounds (but also *māzig*), while in Old English *māte* ‘moderate’ occurs beside *un-māte* ‘immense,’ etc. Secondly, the reverse relation between compound and simplex is often found. In Lithuanian, for example, we have *dorà* ‘agreement,’ but *dara-s* only in compounds, as *pa-dara-s* ‘result,’ etc.; *tvorà* ‘hedge,’ but *tvara-s* only in compounds, as *ap-tvara-s* ‘hedge,’ etc. Beside Skt. *vāda-s* ‘speaking’ the form *vada-s* is found in the literature only in compounds, like *priyaṁ-vada-s* ‘speaking what is agreeable,’ etc. In most cases where both forms exist in Sanskrit, both are found standing alone and in compounds. It ought to be clear from these facts that in Goth. *fidur-dōg-s*, etc., the restriction of the form with the long vowel to compounds is merely accidental. The meaning is that which belongs to a possessive compound, like the Modern German *viertägig*, so that it does not follow that the **dōg-s* itself was a secondary derivative. The relation of Grk. *πρῶτον* to *στοά*, *στοιά* may be the same.

The most probable example of vṛddhi in secondary derivation is Lat. *ovum*, Grk. *ὄν*. For the idea that it comes from the word for bird (Lat. *avi-s*, Skt. *vi-s*, etc.), though doubted by Brugmann, Grd. II 107, is extremely attractive. It is, however, possible, of course, that among the various ablaut forms of this word for bird

there existed one with the long vowel, and that this formed the basis of the secondary derivative. A similar case is Grk. $\phi\acute{\alpha}$ 'sheepskin.'

Further, several Germanic words have been cited in which a collective meaning is associated with forms having the long vowel. These are: O.H.G. *uodal* 'family estate' beside *adal* 'noble'; O.H.G. *muor*, O.E. *mōr* 'moor, swamp' beside *mari* 'sea' (? cf. Kluge, s. v. *Moor*); M.H.G. *buost*, occurring only once and in the phrase 'mit bästinēn *buosten*,' so probably related to *bast*; M.H.G. *gruose* 'juice of plants' beside *gras*. It is not to be denied that these cases are striking. At the same time, since the collective meaning is common enough among primary derivatives, it is possible that we have to do here only with primary doublets of varying meaning. Of a similar nature are the Lithuanian collectives and abstracts quoted by Leskien, *Bildung der Nomina im Litauischen*, p. 301, e. g. *lōbi-s* 'goods, riches' beside *lāba-s* 'good,' *plōti-s* 'breadth' beside *platū-s* 'broad,' etc. Leskien remarks: "Diese Erscheinung erinnert an indische Vriddhirung bei gleichartigen Bildungen; vielleicht sind aber die litauischen Beispiele als Primärbildungen zu alten Verben anzusehen."

The very fact that even the best of the examples cited from the European languages are of such a nature that another explanation is at least possible, is in itself an indication of the source of the phenomenon which is so widely developed in Sanskrit. It has long been obvious that the *vr̥ddhi* of secondary derivation must have its ultimate origin somewhere in primary derivation. For the lengthening of vowels is a purely mechanical process, and there are no phonetic conditions present in secondary derivatives which do not also occur in primary derivatives. v. Bradke, *Z. D. M. G.* 40, 363, suggests that the suffix *a* was added to the strong form of a variable stem, e. g. *māruta-* from **mārut-* (beside *marut-*). Streitberg, *I. F.* III 380, would find the source of the secondary *vr̥ddhi* in the monosyllabic stems like *vāk*, which sometimes show collective meaning. Against this Bloomfield, *Trans. of the Amer. Phil. Assoc.* XXVI, p. 8.

I would suggest as a more probable source the coexistence of forms with long and short vowels in the root-syllable among the primary derivatives with vowel suffixes, especially *-o-*, *-ā-* and *i*. The lists already given show how numerous such forms with the long vowel were. As regards usage, there is no meaning which in itself is indicative of secondary derivation. Among obvious

secondary derivatives the relation to the simplex is manifold. For example, it may be that of descriptive adjective to noun, as Skt. *mānasa-s* 'relating to the mind' to *manas* 'mind,' English *joyous* to *joy*, or of abstract noun to descriptive adjective, as *sāumanasa-m* 'kindness' to *sumanas-* 'kindly,' English *goodness* to *good*. But all such meanings are found in primary derivatives. Now, in the proethnic period there were formed from the same root nouns and adjectives of different shades of meaning and with different ablaut forms. Among the many possible accidental combinations of form and meaning there could not fail to exist such in which forms with long vowels coincided with a meaning which could be felt as secondary in relation to the meaning of other forms with the short vowel. From such coincidences, purely accidental in origin, arose a feeling for a connection between forms with long vowels and secondary derivation, and substantives were then actually formed from other substantives by lengthening the vowel.

Whether this stage had been reached in the Indo-European period is the question we have been debating. The fact that the possible examples are so rare and that even these can be explained otherwise makes this appear more doubtful to me than is generally felt. The actual proof that such a stage has been reached can only be furnished by the existence of the next succeeding stage, that, namely, in which the lengthening has been extended to the initial syllable of words when this syllable is not the root-syllable, or in which the lengthening is of a nature not to be found in primary derivation. This stage is reached only in the Indo-Iranian period. In cases like Av. *pā'ri-vāzō* 'rushing about' from **pa'ri-vāzō* beside Skt. *pāri-plava-s* 'moving about' from *pari-plava-s*, or Av. *māzda-yasni-š* 'pertaining to the worshippers of Mazda' from *mazda-yasnō* 'worshipper of Mazda,' there can be no doubt as to the nature of the phenomenon. The long *ā* before single consonants was inherited from primary derivatives, but was extended to cases like O.P. *Mārgava* 'inhabitant of Margiana' from *Margu-s* 'Margiana,' Skt. *pārçva-s* to *parçu-s*, etc. Then such forms came to be used when the simple word had the weak ablaut-grade *ṛ*, as Av. *vār'pazni-s* 'victorious,' Skt. *vārtraghna-s* to *var'paznō*, *var'praja*, Skt. *vṛtra-hā*. The *āi*, *āu* in their relation to *i*, *u* may have arisen in the same way. To **daiva-* (Skt. *deva-s* 'god') was formed a *dāiva-* (Skt. *dāiva-s* 'divine') and this associated with a form like **dīva-*, resulting in the formation of

Māitra-s 'belonging to Mitra' from *Mitra-s*, etc. For, starting from a form like *viçva-s*, one would expect the analogy of *ā* : *a* to result in a secondary **vīçva-s*, as is the case with the Slavic iteratives. Cf. above, p. 270. The type represented by Skt. *Māitra-s* beside *Mitra-s* or *pāutra-s* 'grandson' beside *pūtra-s* 'son' seems 'not to have been developed in the Indo-Iranian period. At least, no such forms have been found in Iranian, the few examples where we should look for *āi* and *āu* showing rather the *guṇa*. So *praētaonō* beside *pritō* (both proper names) as against Skt. *Trāitana-s*, *haomanan̄hēm* 'kindness' to *humanō* 'kind' as against Skt. *sāumanasa-m* from *sumanas-*, and a few others. The explanation of these *guṇa*-forms, of which perhaps a few are to be recognized in Sanskrit (Whitney, §1204, *g*), is uncertain, but it may be surmised that we have here a phenomenon independent of, but of similar origin with, secondary *vṛddhi*—namely, an extension of an ablaut variation found among primary derivatives, but in this case the variation of strong and weak rather than of strengthened and strong.

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